



1 ENERGY AND ENVIRONMENT CABINET

2 Department for Environmental Protection

3 Division of Waste Management

4 (Amended After Comments)

5 401 KAR 42:060. UST System release response and corrective action for UST systems  
6 containing petroleum or hazardous substances.

7 RELATES TO: KRS 224.01, 224.10, 224.40, 224.43, 224.46, 224.60, 40 C.F.R. Part 280  
8 Subpart F, [Part 281,] 42 U.S.C. 6991-6991c

9 STATUTORY AUTHORITY: KRS 224.10-100, 224.60-105, 224.60-137[, 40 C.F.R.  
10 Part 280 Subpart F, Part 281, 42 U.S.C. 6991e]

11 NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the  
12 cabinet[~~Environmental and Public Protection Cabinet~~] to develop and conduct programs that  
13 provide for the prevention, abatement, and control of contaminants that may threaten the  
14 environment. KRS 224.60-105 requires the cabinet to regulate underground storage tanks[~~tank~~  
15 (~~UST~~)-~~systems~~] by requiring registration, minimum construction and performance standards,  
16 leak detection, recordkeeping, release reporting, corrective action, closure, financial  
17 responsibility, and other requirements[~~standards~~] to protect public health and the environment.  
18 KRS 224.60-105(3) requires the cabinet to establish a regulatory program that implements  
19 federal requirements for UST systems. [~~401 KAR Chapter 42 identifies requirements for UST~~  
20 ~~systems.~~] This administrative regulation establishes the requirements for UST system release  
21 response, site characterization, corrective action, and public participation.

1        Section 1. General requirements. General requirements shall be as established in 40  
2        C.F.R. 280.60.

3        Section 2. Initial response. Initial response requirements shall be as established in 40  
4        C.F.R. 280.61.

5        Section 3. Initial abatement measures and site check. (1) Requirements for initial  
6        abatement and site check shall be as established in 40 C.F.R. 280.62 and 280.63.

7        (2) The following documents shall be used to meet the requirements of subsection (1) of  
8        this section:

9            (a) Release Response and Initial Abatement Requirements Outline;

10          (b) Site Check Outline;

11          (c) Site Check Report Form, DEP 6082;

12          (d) Vapor Intrusion Building Assessment, DEP 0058; and

13          (e) Vapor Intrusion Assessment, DEP 0057.

14        Section 4. Free product removal. Removal of free product shall be as established in 40  
15        C.F.R. 280.64.

16        Section 5. Investigations for soil and groundwater cleanup. (1) Investigations for soil  
17        and groundwater cleanup shall be as established in 40 C.F.R. 280.63 and 280.65.

18        (2) The following documents shall be used in meeting the requirements of subsection (1)  
19        of this section:

20            (a) Site Investigation Outline;

21            (b) Over-Excavation Report Form, DEP 4067; and

22            (c) Site Investigation Report Form, DEP 8049;

1       (3) Owners and operators shall undertake, as directed in writing by the cabinet, corrective  
2       actions necessary to ensure all domestic-use wells, domestic-use springs, and domestic-use  
3       cisterns impacted by a release from a regulated UST system meet the maximum contaminant  
4       levels specified in 401 KAR Chapter 8, applicable to the regulated substance stored.

5       Section 6. Corrective action plan. (1) Requirements for a corrective action plan shall be  
6       as established in 40 C.F.R. 280.66;

7       (2) The following documents shall be used to meet the requirements of subsection (1) of  
8       this section:

9       (a) Corrective Action Outline;

10       (b) Over-Excavation Report Form, DEP 4067;

11       (c) Corrective Action Report Certification, DEP 5040; and

12       (d) Corrective Action Monitoring Report Form, DEP 8045.

13       Section 7. Public participation. Public participation shall be as established in 40 C.F.R.  
14       280.67.

15       Section 8. Extensions. (1) The owner or operator of a UST system may request an  
16       extension to a deadline established by this administrative regulation or established by the cabinet  
17       in writing pursuant to this administrative regulation.

18       (2) The extension request shall be submitted in writing and received by the Underground  
19       Storage Tank Branch of the Division of Waste Management prior to the deadline.

20       (3) The cabinet may grant an extension, if the cabinet determines that an extension would  
21       not have a detrimental impact on human health or the environment.~~[Section 1. Application of~~

22       ~~Federal Regulations. (1) The requirements for UST system release response, site~~

1 characterization, corrective action and public participation for UST systems are governed by 40  
2 C.F.R. Part 280 Subpart F and this administrative regulation.

3 ~~(2) The documents incorporated by reference in Section 4 of this administrative~~  
4 ~~regulation shall be used in meeting the requirements of subsection (1) of this section.~~

5 Section 2. Extensions The owner or operator of a UST system may request extension of  
6 the time frame for reports required by this administrative regulation. The extension request shall  
7 be submitted in writing and received by the Underground Storage Tank Branch of the Division  
8 of Waste Management prior to the deadline. The cabinet may grant extensions, if the cabinet  
9 determines that an extension would not have a detrimental impact on human health or the  
10 environment.]

11 Section 9[3]. No Further Action Letter. (1) If a UST facility has met all applicable  
12 requirements in 401 KAR Chapter 42, the cabinet shall issue a no further action letter [for the  
13 UST facility].

14 (2) Any unpaid registration fees due in accordance with 401 KAR 42:200, shall be paid in-  
15 full prior to the cabinet issuing a no further action letter [to any UST facility].

16 (3) Upon a determination by the cabinet that a threat to human health or the environment  
17 exists, related to a release or permanent closure for which a No Further Action letter was  
18 previously issued, the cabinet may revoke the No Further Action letter and require necessary  
19 action in accordance with 401 KAR Chapter 42.

20 Section 10[4]. Incorporation by Reference. (1) The following material is incorporated by  
21 reference:

22 (a) "Release Response and Initial Abatement Requirements Outline", (April 2011);

23 (b) "Site Check Outline", (July[April] 2011);

(c) "Site Check Report Form", DEP 6082, (April 2011);  
(d) "Vapor Intrusion Building Assessment", DEP 0058, (July[April] 2011);  
(e) "Vapor Intrusion Assessment", DEP 0057, (July[April] 2011);  
(f) "Site Investigation Outline", (July[April] 2011);  
(g) "Over-Excavation Report Form", DEP 4067, (April 2011);  
(h) "Site Investigation Report Form", DEP 8049, (April 2011);  
(i) "Corrective Action Outline", (April 2011);  
(j) "Corrective Action Report Certification", DEP 5040, (April 2011); and  
(k) "Corrective Action Monitoring Report Form", DEP 8045, (April 2011).[(a) "Site  
Check Outline", (August 2006);  
(b) "Site Investigation Outline", (August 2006);  
(c) "Corrective Action Plan Outline", (August 2006);  
(d) "UST System Release Response and Initial Abatement Requirements Outline",  
(August 2006); and  
(e) "Site Investigation Checklist Form", DEP 8049, (August 2006).]  
(2)(a) This material may be inspected, copied, or obtained, subject to copyright law, at  
the Division of Waste Management, 200 Fair Oaks Lane, Second Floor[Underground Storage  
Tank Branch, 81 C. Michael Davenport Blvd.], Frankfort, Kentucky 40601, Monday through  
Friday, 8 a.m. to 4:30 p.m.  
(b)[(3)] This material is also available on the Division of Waste Management's Web site  
at <http://waste.ky.gov/ust>.[may also be obtained by calling the Division of Waste Management at  
(502) 564-5981 or on the division's Web page located at [www.waste.ky.gov](http://www.waste.ky.gov).]

401 KAR 42:060 approved for filing.

7/13/11

Date

L. K. Peters

Leonard K. Peters, Secretary  
Energy and Environment Cabinet

## REGULATORY IMPACT ANALYSIS AND TIERING STATEMENT

Contact Person: Cassandra Jobe

(1) Provide a brief summary of:

(a) What this administrative regulation does:

This administrative regulation establishes the requirements for UST system release response, site characterization, corrective action, and public participation.

(b) The necessity of this administrative regulation:

This administrative regulation is necessary because it refers to the federal requirements for corrective action, public participation, site characterization, and UST system release response.

(c) How this administrative regulation conforms to the content of the authorizing statutes:

This administrative regulation conforms to the content of the authorizing statute by requiring at least the federal program.

(d) How this administrative regulation currently assists or will assist in the effective administration of the statutes:

This administrative regulation currently assists in the effective administration of the statute by establishing the requirements for UST system release response, site characterization, corrective action, and public participation.

(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:

(a) How the amendment will change this existing administrative regulation:

The amendment changes the forms incorporated by reference to add clarity.

(b) The necessity of the amendment to this administrative regulation:

This amendment is necessary to add clarity in the documents incorporated by reference.

(c) How the amendment conforms to the content of the authorizing statutes:

The amendment conforms to the content of the authorizing statute by clarifying procedures in the documents incorporated by reference for site investigation and corrective action activities.

(d) How the amendment will assist in the effective administration of the statutes:

The amendment will assist in the effective administration of the statute by clarifying the requirements for UST system release response, site characterization, and corrective action.

(3) List the type and number of individuals, businesses, organizations, or state and local

governments affected by this administrative regulation:

There are approximately 3,700 UST facilities registered with the agency.

(4) Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:

(a) List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment:

Regulated entities will have to use the revised outlines and forms to comply with the requirements of this amendment.

(b) In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3):

It should not cost the regulated entities additional funding to comply with this amendment.

(c) As a result of compliance, what benefits will accrue to the entities identified in question (3):

As a result of compliance, the regulated entities will remediate sites to levels that protect human health and the environment.

(5) Provide an estimate of how much it will cost the administrative body to implement this administrative regulation:

(a) Initially:

There is no additional cost to the agency to implement this amendment.

(b) On a continuing basis:

There is no additional cost to the agency to implement this amendment.

(6) What is the source of the funding to be used for the implementation and enforcement of this administrative regulation:

This amendment will be funded by the PSTeAF, tank fees, and grants from the US EPA.

(7) Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new, or by the change if it is an amendment:

An increase in fees is not necessary to implement this amendment.

(8) State whether or not this administrative regulation established any fees or directly or indirectly increased any fees:

This amendment does not establish or affect any fees.

(9) TIERING: Is tiering applied? (Explain why or why not)

Tiering is not applied. The requirements for UST system releases, site characterization, and corrective actions are the same.

FISCAL NOTE ON STATE OR LOCAL GOVERNMENT

Regulation No. 401 KAR 42:060

Contact Person: Cassandra Jobe

1. Does this administrative regulation relate to any program, service, or requirements of a state or local government (including cities, counties, fire departments, or school districts)?

Yes X No       

If yes, complete questions 2-4.

2. What units, parts or divisions of state or local government (including cities, counties, fire departments, or school districts) will be impacted by this administrative regulation?

The Division of Waste Management

3. Identify each state or federal statute or federal regulation that requires or authorizes the action taken by the administrative regulation.

40 C.F.R. 280 Subpart F; KRS 224.60-105; 224.60-137

4. Estimate the effect of this administrative regulation on the expenditures and revenues of a state or local government agency (including cities, counties, fire departments, or school districts) for the first full year the administrative regulation is to be in effect.

(a) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for the first year?

This amendment will not generate revenue.

(b) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for subsequent years?

This amendment will not generate revenue.

(c) How much will it cost to administer this program for the first year?

This amendment will not cost additional money to implement.

(d) How much will it cost to administer this program for subsequent years?

This amendment will not cost additional money to implement.

Note: If specific dollar estimates cannot be determined, provide a brief narrative to explain the fiscal impact of the administrative regulation.

Revenues (+/-):

Expenditures (+/-):

Other Explanation:

## FEDERAL MANDATE ANALYSIS COMPARISON

1. Federal statute or regulation constituting the federal mandate.

40 C.F.R. 280 Subpart F

2. State compliance standards.

KRS 224.60-105

3. Minimum or uniform standards contained in the federal mandate.

Requirements for site check, site investigation, and corrective action

4. Will this administrative regulation impose stricter requirements, or additional or different responsibilities or requirements, than those required by the federal mandate?

Yes, additional requirements

5. Justification for the imposition of the stricter standard, or additional or different responsibilities or requirements.

KY requires KY specific forms for site investigation and corrective action activities.

## Detailed Summary of Material Incorporated by Reference

I. This administrative regulation incorporates by reference the “Release Response and Initial Abatement Requirements Outline”, (April 2011). This document is to be used when a confirmed release has occurred from a UST system.

This document consists of 8 pages.

II. This administrative regulation incorporates by reference the “Site Check Outline”, (April 2011). This document is to be used by UST owners when the cabinet directs them to do a site check because of a suspected release from a UST system.

This document consists of 8 pages.

III. This administrative regulation incorporates by reference the “Site Check Report Form”, DEP 6082, (April 2011). This document is to be used to report the findings of the site check done in accordance with the Site Check Outline.

This document consists of 2 pages.

IV. This administrative regulation incorporates by reference the “Vapor Intrusion Building Assessment”, DEP 0058, (April 2011). This document is to be used to report the type of building and its uses prior to conducting a vapor intrusion assessment.

This document consists of 2 pages.

V. This administrative regulation incorporates by reference the “Vapor Intrusion Assessment”, DEP 0057, (April 2011). This document is to be used to report the findings of a vapor intrusion assessment directed by the agency.

This document consists of 2 pages.

VI. This administrative regulation incorporates by reference the “Site Investigation Outline”, (April 2011). This document is to be used to determine the horizontal and vertical extent of contamination after a UST system release has been confirmed.

This document consists of 18 pages.

VII. This administrative regulation incorporates by reference the “Over-Excavation Report Form”, DEP 4067, (April 2011). This document is to be used to report over-excavation activities at a UST facility.

This document consists of 2 pages.

VIII. This administrative regulation incorporates by reference the "Site Investigation Report Form", DEP 8049, (April 2011). This document is to be used to report the findings of site investigation activities conducted in accordance with the Site Investigation Outline.

This document consists of 2 pages.

IX. This administrative regulation incorporates by reference the "Corrective Action Outline", (April 2011). This document is to be used to determine the performance of necessary corrective actions after the extent of vertical and horizontal contamination has been defined.

This document consists of 15 pages.

IX. This administrative regulation incorporates by reference the "Corrective Action Report Certification", DEP 5040, (April 2011). This document is to be used to report the results of corrective action activities.

This document consists of 1 page.

IX. This administrative regulation incorporates by reference the "Corrective Action Monitoring Report Form", DEP 8045, (April 2011). This document is to be used to report corrective action monitoring.

This document consists of 4 pages.

## STATEMENT OF CONSIDERATION RELATING TO

401 KAR 42:060

### Amended After Comments

Energy and Environment Cabinet  
Department for Environmental Protection  
Division of Waste Management

- I. A public hearing on 401 KAR 42:060 was held on May 24, 2011 at 10:00 a.m. in Conference Room 301 D at 300 Fair Oaks Lane, Frankfort, Kentucky, 40601. The following people attended the public hearing and provided verbal comment:

<u>Name and Title</u>	<u>Affiliation</u>
Jason Kuykendall, Geologist	EnSafe Inc.
Ted Withrow	Kentuckians for the Commonwealth (KFTC)
Bob Burns, P.G.	Kentuckians for the Commonwealth (KFTC)

- II. The following people submitted written comments:

<u>Name and Title</u>	<u>Affiliation</u>
Tim Crumie, P.G.	GeoScience
William Ackland, P.G.	SRW Environmental Services
Richard Maxedon, President	Kentucky Petroleum Marketers Association (KPMA)
Karen Thompson, Accounting Manager	Smith Management Group (SMG)
Rob Daniell, Manager	Underground Storage Tank Branch

- III. The following people responded to comments:

<u>Name and Title</u>	<u>Affiliation</u>
Anthony Hatton, Director	Division of Waste Management
Rob Daniell, Manager, UST	Division of Waste Management
Cassandra Jobe, Supervisor, PPA	Division of Waste Management

#### IV. Summary of Comments and Responses

- (1) Subject matter: Initial abatement actions and reimbursement.  
(a) Comment: Richard Maxedon, Kentucky Petroleum Marketers Association; Jason Kuykendall, EnSafe

With respect to proposed new 401 KAR 42:060, we believe that some clarification is necessary. When a facility makes a suspected release notification and ERT sends a responder to investigate, the regulations are unclear as to which initial abatement actions taken by the facility and/or contractor are reimbursable, and which actions are not. The regulations seem to indicate that no initial response actions are reimbursable until either a site check directive is issued by USTB or an emergency declaration is declared by ERT. This policy may result in under-reporting of suspected releases due to the potential financial implications.

**(b) Response:**

Suspected UST system releases, as defined in 401 KAR 42:005, shall be reported to the Environmental Response Branch in accordance with 401 KAR 42:050. Investigations of suspected UST system releases are not reimbursable beyond the performance of a Site Check directed in writing by the cabinet. However, upon confirmation of a release outside of the excavation zone, reimbursement shall be made in accordance with 401 KAR 42:250.

Initial response actions taken in accordance with the Release Response and Initial Abatement Outline are only required for confirmed releases outside of the excavation zone. 401 KAR 42:250 is clear that reimbursement of initial abatement actions is limited to confirmed releases outside of the excavation zone. However, the Division has added language to Section 2.14 of the Contractor Cost Outline to clarify.

**(2) Subject Matter: Reports**

**(a) Comment: Tim Crumbie, GeoScience**

How do Corrective Action Monitoring Reports, Quarterly Monitoring Reports, and Groundwater Monitoring reports differ?

**(b) Response:**

DEP 8045, is to be used when directed in writing by the USTB. When using this form for UST facilities without active remediation systems, only the applicable sections shall be completed. There are various sections of the form that require narratives to be provided.

**(3) Subject Matter: Vapor Intrusion**

**(a) Comment: William Ackland, SRW**

Draft regulations state additional corrective action for vapor intrusion may be required if vapor problems persist after cleaning groundwater up to Table II or III (elevated) levels. Groundwater is not the sole source of vapor intrusion. How about adding a similar statement for elevated soil concentrations? For that matter, how about a statement regarding additional soil corrective action may be required if clean-up to elevated soil concentrations is achieved, but groundwater levels still exceed applicable screening levels?

**(b) Response:**

The cabinet disagrees. Generally, vapor intrusion is a result of a significant release where free product or extraordinarily high levels of contamination exist. Residual soil contamination meeting the soil screening levels would likely not constitute a source for vapor intrusion. With the enhanced mobility of groundwater contamination that could intercept pathways of least resistance, contaminated groundwater could pose a more direct threat of vapor intrusion as opposed to soil contamination. The issue within this

comment regarding the need to impose more stringent soil cleanup requirements to ensure effective groundwater cleanup is not relevant as part of the characterization process and the application of site-specific screening levels. This evaluation will be performed as part of the formal corrective action process and the conceptual site model development. Should conditions dictate that more stringent soil cleanup is necessary, those requirements will be directed within the corrective action phase. No changes were made in response to this comment.

**(4) Subject Matter: Vapor Intrusion**

**(a) Comment: William Ackland, SRW**

Screening levels for vapor (indoor air) concentrations are not established. It appears vapor assessment and remediation is a significant part of the draft regulations. But if no allowable levels are established, then what levels should the PE/PG consider when making recommendations for future assessment/remediation?

**(b) Response:**

The cabinet disagrees. Given the variability in vapor intrusion scenarios, a generic set of standards would not be appropriate or applicable to all situations. The P.E. or P.G. should consider site-specific conditions, exposure scenarios and updated toxicological information to recommend future assessment/remediation. In addition, the cabinet will evaluate each site-specific scenario and participate in the evaluation of necessary remedial goals. No changes were made in response to this comment.

**(5) Subject Matter: Site Check Outline**

**(a) Comment: William Ackland, SRW**

Section 4.7 A comma after "encountered" (first paragraph, line 4) would add clarity.

**(b) Response:**

The Division agrees and has made the suggested change.

**(6) Subject Matter: DEP 0057 and 0058 – Vapor Intrusion**

**(a) Comment: Karen Thompson, SMG**

These forms require either a PE or PG to sign these forms attesting the information is true, accurate, and complete. A PE or PG managing a UST project should have knowledge of the truth, accuracy and completeness of the information, but may not know if the information collected is appropriate. Indoor air quality associated with possible vapor intrusion should be taken seriously. SMG believes a qualified/certified industrial hygienist should be employed to conduct the survey, develop a sampling plan, direct the sampling procedures and evaluate the resulting samples. Simply filling out these forms does not guarantee the information gathered is complete and useful data.

**(b) Response:**

Adequate published data is available for reference to a PE or PG overseeing vapor intrusion assessments. In addition, the eligible company or partnership has the ability to engage the services of a certified industrial hygienist at their discretion within the established reimbursable amount. No changes made in response to this comment.

**(7) Subject Matter: Site Investigation Outline**

**(a) Comment: Rob Daniell, Underground Storage Tank Branch**

Clarity is need regarding well installation for direct push vs. pre-pack.

**(b) Response:**

The Division agrees and has amended Section 5.8 of the Site Investigation Outline.

**(8) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

The draft regulations have site investigation reports on a form (DEP8049). Report text will be partitioned into fields and appendices. Technical review may be simpler if everything can be pigeonholed under set fields on a form. However, this may be a recipe for additional information requests, due to necessary information being broken into so many appendices rather than centrally located in one section of a text report. This may be especially true due to the amount of miscellaneous information (i.e. no relevant text field on DEP8049) typically requested in many Site Investigation directives.

**(b) Response:**

The cabinet disagrees. The cabinet's position is that standardized reporting provides multiple benefits including reduced deficiencies, expedited reviews and increased consistency. The site investigation report form allows for necessary appendices and attachments to address information requested that is outside of what the form includes, as necessary. No changes were made in response to this comment.

**(9) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

Septic systems are required to be depicted on the Initial Site Survey map. An inordinately large proportion of property owners do not know the approximate location of their own systems – let alone an exact location. SRW Environmental Services, Inc. (SRW) has, and will continue to depict septic systems when and where possible, but please be aware these are generally very approximate.

**(b) Response:**

The cabinet understands that subsurface utilities can only be approximately located in most situations. No changes were made in response to this comment

**(10) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

The draft regulations propose to include top of casing elevations for all existing monitoring wells in Initial and Additional Site Survey work. The intent of site surveys has been to generate a useable basemap from which to direct future work. As such, positional (and not elevational) information has been of primary importance.

Site survey maps are to be stamped and signed by a registered professional. As such, the registered professional plays an integral part in the generation and verification of the maps. Field technicians generally do not have the required level of expertise at the established pay rates in order to conduct this work to a level satisfactory to the registered professional. Also, only one personnel mobilization is allowed for site survey work, so the registered professional cannot field check the work of others. So, the registered professional has to personally conduct the field work or employ a licensed surveying firm. However, employing a licensed surveying firm would exceed the reimbursable

amount. This means the best way of completing this task within the reimbursable range is for the registered professional to perform the survey.

The average site may have ten wells, and many sites have closer to twenty. Well surveys have been removed from the draft line item costs, but the existing regulations list survey work at \$100 per well. Therefore, the elevational survey cost alone may exceed the cost of the Initial Site Survey and will definitely exceed the cost of most Additional Site Surveys. Unfortunately, the positional survey work which is truly necessary here has not even been touched for the draft regulation price. This is further compounded by the fact elevational survey work is usually conducted by different, lower cost, instruments and does not need the same level of oversight by a registered professional. Lumping elevational survey work into the site surveys in essence requires it be performed by higher pay grade personnel – this further elevates the cost.

SRW requests the site survey work be restored to the original intent – creating a map to direct future work. If elevational survey work is to be included in the site surveys, then using an average of ten wells and the current costs, an additional \$1,000 needs to be added to Initial Site Surveys and the first Additional Site Survey included in any directive (if an Initial Site Survey is not included in the same directive).

**(b) Response:**

Current technology allows for the performance of this task without additional personnel and would not necessitate the need for a PE or PG to perform the work. The language in Section 5.5 of the Site Investigation has been changed to clarify that the elevation of the top of casing survey is not required at each sampling event. The elevation of the top of casing data previously collected should be included on the Historical Groundwater Gauging Data Table. The Division removed language in 3.1(c) requiring the surveying of top of casing elevations in Additional Site Surveys. The Division added a line item to the Contractor Cost Outline for determining the well or piezometer top of casing elevations.

**(11) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

Initial and Additional Site Surveys are to be included on a “single map”. With all the required information, this is not feasible for many sites – the more Additional Site Survey areas which are added, the less feasible this becomes. For legibility, the map must be broken into multiple sheets. Will this be acceptable to the USTB as a “single map”?

**(b) Response:**

The Division recognizes that in some situations, it is not feasible to represent all information on one map and maintain legibility. In these situations, submittal of multiple maps is acceptable

**(12) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

An expanded vicinity map (300 meter radius) may be required to depict well/cisterns/springs between 100 and 300 meters from the site. In many rural areas, adequate airphoto coverage is not available to depict roads, buildings, etc. This requirement may entail a considerable amount of legwork, but there is apparently no

reimbursable cost associated with an "expanded" vicinity map. How will this additional field work be compensated?

**(b) Response:**

The Site Investigation Outline describes the vicinity map as a general depiction of the approximate property boundaries. The cabinet does not intend to require additional field work solely for the development of a vicinity map, but anticipates that any field work necessary to develop a vicinity map would be associated with the mobilization to complete other directed actions.

**(13) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

Topographic maps will require latitude/longitude labels. Unless a site is in the corner of a USGS topographic map, the lat/long labels will have to be added after-the-fact if the USTB desires the map to be of a useable scale. Since this will be a matter of cut and paste, the lat/long labels will be approximate unless the whole 7.5 minute quadrangle map is reduced and submitted. However, this would render the labels illegible, and would make identifying the site location problematic. As long as a latitude and longitude is specified in the report, is inclusion of these labels on the topographic map truly necessary?

Geologic maps will be required with each report, and will require latitude/longitude labels.

**(b) Response:**

The Division clarified in 3.3 and 3.4 that the lat and long are for the UST facility.

**(14) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

Alternate boring locations (plural) are to be attempted if early termination is encountered. SRW already does this, but there is a limit to the number of holes SRW will attempt for only one soil boring fee. What number of alternate locations will be considered adequate?

**(b) Response:**

The Division relies on the professional opinion of the PE or the PG to make such a determination. The Division expects that the PE or PG will make a reasonable effort to distinguish refusal that is a result of inadequate equipment or other subsurface impediments that do not constitute bedrock refusal.

**(15) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

Historical soil tables shall meet requirements of Section 5.0. Section 5.0 is for groundwater. Should this refer to Section 4.9?

**(b) Response:**

The Division agrees and has made the reference correction.

**(16) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

A large amount of additional information not currently required will be required for all future site investigation reports under the draft regulations. This includes hydrographs, up to six contaminant extent maps, concentration vs. time graphs for each monitoring point, along with map and table revisions, etc. (Section 3.8 does not mention if the concentration vs. time graphs are to be per detected constituent or for total BTEX/PAH – please clarify this).

These additions will necessitate a considerable expenditure of time on the first report completed under the new regulations. Based on Conceptual Site Model obligations, roughly three days of work will be added per site for the first report. This is fine as long as the first site investigation report completed under the new regulations will be compensated at a higher rate. However, even if the Initial Site Investigation report cost (\$2,975) is utilized, the difference between the initial and intermediate report costs will cover less than half of the additional workload. Please bear in mind concentration vs. time and hydrographs are not necessary for an initial site investigation since generally only one temporal data point has been generated. Therefore, the draft requirements would add a large initial workload requirement which would not happen under the normal course of reporting.

Historically, some of this information has been requested (incrementally) for site investigation reports, and all of it was required for the considerably more expensive Conceptual Site Model report. If the USTB desires to keep the requirement for all of this information in all site investigation reports, then it will increase the cost of the first report by around \$2,000 over and above the standard intermediate site investigation report cost (\$1,905).

Geologic maps will be required with each report, and will require latitude/longitude labels.

**(b) Response:**

The Division agrees. Sections 3.6 and 3.8 have been deleted. The requirements for hydrographs and concentration vs time plots have been deleted from the Site Investigation Outline. These requirements are already in the CSM and compensated for through the CSM reporting cost.

**(17) Subject Matter: Site Investigation Outline**

**(a) Comment: William Ackland, SRW**

Topographic maps will require latitude/longitude labels. Unless a site is in the corner of a USGS topographic map, the lat/long labels will have to be added after-the-fact if the USTB desires the map to be of a useable scale. Since this will be a matter of cut and paste, the lat/long labels will be approximate unless the whole 7.5 minute quadrangle map is reduced and submitted. However, this would render the labels illegible, and would make identifying the site location problematic. As long as a latitude and longitude is specified in the report, is inclusion of these labels on the topographic map truly necessary?

Geologic maps will be required with each report, and will require latitude/longitude labels.

**(b) Response:**

The Division clarified in 3.3 and 3.4 that the latitude and longitude are for the UST facility.

**(18) Subject Matter: Practice of Geology**

**(a) Comment: Bob Burns, KFTC**

The Division is allowing for geologic work to be done by non P.G.s

**(b) Response:**

The Division disagrees. Please review the Opinion and Declaratory Ruling Regarding the Practice of Geology on Underground Storage Tank (UST) removal and related site investigations and corrective actions issued by the Kentucky Board of Registration for Professional Geologists in December 2010.

**(19) Subject Matter: Oversight by USTB**

**(a) Comment: Bob Burns, KFTC; Ted Withrow, KFTC**

The Division should be doing more oversight of contractors and remediation work.

**(b) Response:**

The Division disagrees. There are approximately 11,200 registered UST systems in Kentucky. The division does not have the staff or funding necessary to have oversight of all UST facilities conducting site investigation and corrective action activities.

**V. Summary of Action Taken by Promulgating Agency**

**401 KAR 42:060: Comments were considered and the following changes are suggested:**

The following changes were made to the documents incorporated by reference, which were filed with the Amended After Comments version of the administrative regulation:

The Site Investigation outline was amended to address comments about site surveys and well installation.

The Site Check Outline has been amended to provide clarity.

The forms related to vapor intrusion, DEP 0058 and DEP 0057 have been altered to have clearer language.